

REMARKS

The Office Action dated October 25, 2004, has been received and reviewed.

Claims 1-6, 8-23, and 36-49 -36 (renumbered 1-36) are currently pending and under consideration in the above-referenced application. Each of claims 1-6, 8-23, 36, 37, and 40-49 (renumbered claims 1-24 and 27-36) stands rejected. Claims 38 and 39 (renumbered claims 25 and 26) recite allowable subject matter.

New claims 50-53 have been added.

Reconsideration of the above-referenced application is respectfully requested.

Claim Numbering

Claim numbers are referred to inconsistently in the outstanding Office Action. To avoid confusion, the claims are referred to in this communication by both their original numbers with their new numbers in parenthesis if they have been renumbered (all claims after original claim 6 have been renumbered).

Drawings

Replacement drawings are submitted with this communication. The enclosed replacement drawings do not introduce new matter into the above-referenced application. Approval and entry of the replacement drawings are respectfully requested.

Claim Amendments

Each of the claims has been amended to remove the term "said" or to replace "said" with the equivalent term "the." As these revisions merely comprise the removal of extraneous terms or the substitution of one term for an equivalent term, none of these revisions narrows the scope of any of the claims that remains pending in the above-referenced application.

An additional amendeds to independent claims 19 (renumbered claim 18) and 36 (renumbered claim 23) are discussed in further detail hereinafter.

Rejections Under 35 U.S.C. § 102

Claims 1-6, 8-23, 36, 37, and 40-49 (renumbered claims 1-24 and 27-36) stand rejected under 35 U.S.C. § 102(e) for reciting subject matter which is purportedly anticipated by that described in U.S. Patent 6,740,962 to Grigg (hereinafter “Grigg”).

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Grigg describes methods for fabricating stiffeners for polymeric films, such as tape substrates. The stiffeners of Grigg may be formed by selectively and sequentially consolidating material in a plurality of layers to an at least partially solid state. The resulting stiffeners include a plurality of at least partially superimposed, contiguous, mutually adhered material layers. The spacers may be fabricated on a polymeric film or preformed, then secured to the film.

While the claims of the above-referenced application recite similar methods for forming spacers on semiconductor dice, Grigg lacks any express or inherent description that such methods may be used in such a manner.

Specifically, independent claim 1 is directed to a method for modifying a semiconductor die. The method of independent claim 1 includes providing at least one semiconductor die. In addition, independent claim 1 recites “forming on or securing to [an] active surface [of the at least one semiconductor die] at least one stabilizer . . .”

Grigg does not expressly or inherently describe providing a semiconductor die or forming or securing a spacer *on an active surface of a semiconductor die*. Therefore, Grigg does not anticipate each and every element of independent claim 1, as required to maintain the 35 U.S.C. § 102(e) rejection of independent claim 1.

Claims 2-6, 8-17 (renumbered claims 2-16) are each allowable, among other reasons, for depending directly or indirectly from claim 1, which is allowable.

Claim 5 is additionally allowable since Grigg includes no express or inherent description of forming the stiffeners thereof so as to have heights that define a substantially consistent die-to-substrate distance.

Claim 8 (renumbered claim 7) is further allowable because Grigg does not expressly or inherently describe forming a stiffener to be securable to a sealing material for a semiconductor die.

Claim 9 (renumbered claim 8) is additionally allowable because Grigg lacks any express or inherent description of providing a semiconductor wafer including a plurality of dice.

Claim 13 (renumbered claim 12) is also allowable since Grigg does not expressly or inherently describe introducing encapsulant material between a semiconductor die and a substrate that are separated by a stabilizer.

Independent claim 18 (renumbered claim 17) is drawn to a method of modifying a semiconductor device component, which includes providing at least one semiconductor substrate and sequentially forming at least one stabilizer on a contact pad-bearing active surface of the semiconductor substrate. The at least one stabilizer is “configured to at least partially stabilize an orientation of the semiconductor device component upon being disposed active-surface down over a higher-level substrate.”

Grigg lacks any express or inherent description of forming the stabilizers thereof in such a way that they are configured to at least partially stabilize an orientation of the film upon which they are positioned when the film is oriented over a higher-level substrate. Instead, the stabilizers of Grigg are formed so as to prevent bending of the film.

Therefore, Grigg does not anticipate each and every element of independent claim 18 (renumbered claim 17). Accordingly, under 35 U.S.C. § 102(e), independent claim 18 (renumbered claim 17) is drawn to subject matter which is allowable over the subject matter described in Grigg.

Independent claim 19 (renumbered claim 18) is also directed to a method of modifying a semiconductor device component. The method of independent claim 19, as amended and presented herein, includes placing at least one semiconductor substrate including at least one semiconductor die in a horizontal plane.

While Grigg describes a method in which a polymeric film (*i.e.*, a substrate) may be placed in a horizontal plane, the Grigg lacks any express or inherent description that the substrate may include a semiconductor die. Therefore, Grigg does not anticipate each and every element of amended independent claim 19 (renumbered claim 18). Thus, under 35 U.S.C. § 102(e), the subject matter to which amended independent claim 19 (renumbered claim 18) is directed is allowable over the subject matter disclosed in Grigg.

Each of claims 20-23 (renumbered claims 19-22) is allowable, among other reasons, for depending directly or indirectly from claim 19 (renumbered claim 18), which is allowable.

Independent claim 36 (renumbered claim 23) recites a method for electrically bonding a semiconductor device component with conductive structures protruding from a surface thereof to a substrate that includes contacts positioned correspondingly to the conductive structures. As amended, the method of independent claim 36 (renumbered claim 23) includes stereolithographically forming at least one stabilizer structure on the substrate a located over which the semiconductor die is to be positioned, and inverting and positioning the semiconductor die over the substrate.

Grigg neither expressly nor inherently describes that a stabilizer may be formed on the polymeric film thereof at a location over which a semiconductor die component may be inverted and positioned. Accordingly, it is respectfully submitted that, under 35 U.S.C. § 102(e), amended independent claim 36 (renumbered claim 23) recites subject matter which is allowable over that described in Grigg.

Claims 37 (renumbered claim 24) and 40 (renumbered claim 27) are both allowable, among other reasons, for depending directly from claim 36 (renumbered claim 23), which is allowable.

Independent claim 41 (renumbered claim 28) is drawn to a method for modifying a semiconductor die that includes, among other things, applying a layer of partially uncured photopolymer to a semiconductor die.

The method of Grigg is limited to applying uncured photopolymer to a polymeric film. Therefore, Grigg does not expressly or inherently describe, or anticipate, each and every element of independent claim 41 (renumbered claim 28). As such, under 35 U.S.C. § 102(e), the subject matter to which independent claim 41 is directed is allowable over the subject matter disclosed in Grigg.

Claims 42-49 (renumbered claims 29-36) are each allowable, among other reasons, for depending directly or indirectly from claim 41 (renumbered claim 28), which is allowable.

Claim 44 (renumbered claim 31) is additionally allowable since Grigg includes no express or inherent description of forming the stiffeners thereof so as to have heights that define a substantially consistent die-to-substrate distance.

Claim 45 (renumbered claim 32) is additionally allowable because Grigg lacks any express or inherent description of providing a semiconductor wafer including a plurality of dice.

Claim 46 (renumbered claim 33) is also allowable since Grigg does not expressly or inherently describe introducing encapsulant material between a semiconductor die and a substrate that are separated by a stabilizer.

For these reasons, withdrawal of the 35 U.S.C. § 102(e) rejections of claims 1-6, 8-23, 36, 37, and 40-49 (renumbered claims 1-24 and 27-36) is respectfully solicited.

Inapplicability of Grigg in Rejection Under 35 U.S.C. § 103(a)

Please note that the above-referenced application has been assigned to Micron Technology, Inc., the same entity to which the above-referenced application has been assigned. Additionally, the above-referenced application was filed after November 29, 1999. *See* the assignment recorded with the Office at Reel No. 010865, Frame No. 0194. In view of these facts, as well as the fact that Grigg only qualifies as prior art to the above-referenced application

under 35 U.S.C. § 102(e), 35 U.S.C. § 103(c) prevents reliance upon the teachings of Grigg in a 35 U.S.C. § 103(a) rejection of the claims of the above-referenced application.

Allowed Claims/New Claims

The indication that claims 38 and 39 (renumbered claims 25 and 26) recite allowable subject matter is noted with appreciation.

Both of these claims have been amended to independent form, with new independent claim 50 including many of the limitations of claim 38 (renumbered claim 25), and new claims 51-53 depending therefrom. New claim 51 includes substantially the same limitations as claim 38 (renumbered claim 25). New claims 52 and 53 are directed to the same additional subject matter recited in claims 39 and 40 (renumbered claims 26 and 27), respectively.

It is respectfully submitted that none of new claims 50-53 introduces new matter into the above-referenced application.

CONCLUSION

It is respectfully submitted that each of claims 1-6, 8-23, and 36-49 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



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BGP/ps:rmh
Attachment: Replacement Formals

Document in ProLaw

IN THE DRAWINGS:

Replacement drawings are enclosed herewith. The replacement drawing sheets include Figs. 1-22 and replace all previous drawing sheets submitted in the above-referenced application.